UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,058	10/21/2004	Toshio Nomura	0033-0960PUS1	8612

2292 7590 07/31/2007

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
BROOME, SAID A	
ART UNIT	**PAPER NUMBER**
2628	

NOTIFICATION DATE	DELIVERY MODE
07/31/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/512,058	NOMURA ET AL.	
	Examiner	Art Unit	
	Said Broome	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/30/07*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7,10-21,23-26 and 33-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7,10-21,23-26 and 33-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to an amendment filed on 4/30/2007.

2. Claims 1, 10-12, 16, 18-21, 23-26 and 33-36 have been amended by the applicant.

3. Claims 2-4, 6, 7, 13-15 and 17 are original.

4. Claims 5, 8, 9, 22 and 27-32 have been cancelled.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6, 7, 12, 14-16, 20, 23, 24 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift (US Patent 6,765,568) in view of Osaka et al.(herein "Osaka", US Patent 6,023,277).

Regarding claim 1, Swift describes an image data generation apparatus in column 5 lines 21-23 and is illustrated in Figure 2 as element 102. Swift describes receiving a parameter for displaying three-dimensional image data in column 3 lines 24-26 - 47-50 ("...*a...file format...of*

the original left and right is known, as designated by the tag within the...file..."), including information data for controlling display of the three-dimensional image data in column 2 lines 28-41 ("*The preferred embodiment...provides a single format with independent right and left channels...to represent the stereoscopic media...it provides a means of displaying stereoscopic media...it provides automatic and manual optimization adjustments such as parallax shift adjustment...to the stereoscopic media based on viewing hardware...for optimal viewing quality.*"), where it is described that information that controls how to display the three-dimensional image data is provided. Swift also describes three-dimensional image display control information generation means for generating three-dimensional image display control information by encoding said parameter in column 4 lines 6-11 ("*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output...methods include a video setup format for compression...Several tools are used in the process. These include...a stereo compression analysis tool to detect if the stereo information is preserved after compression.*") and in column 11 lines 12-16 ("*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*"), where it is described that a parameter, or stereo information, that provides information regarding how to correctly display and align the stereoscopic images is encoded. Swift describes file generation means for generating a multimedia information file including both of said three-dimensional image display control information, as described in column 3 lines 24-26 and 47-50 ("*...a single media file format that is converted to various display formats...the format of the original left and right is...designated by the tag within*

the...file...", and as shown in Figure 1) and said three-dimensional image data in column 8 lines 11-20 ("*...a file structure is created to store and preserve various types of stereo media...This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain...a Stereo Still Image 1004...Stereoscopic Object Model...*"), where it is described that the stereoscopic media file also contains three-dimensional image data such as stereoscopic three-dimensional models. However, Swift fails to teach header control information added to a multimedia information file. Osaka teaches header control information in column 5 lines 4-11 ("*...information indicating...a three-dimensional display...is provided in the header of a file...this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed...*"), as shown in Figure 12 as element 51. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift with Osaka because this combination would provide encoded three-dimensional image data as taught by Swift, in which the three-dimensional data file comprises a header control data, as taught by Osaka, in which the data processing of the three-dimensional image data is thereby reduced through analysis of the header control information which indicates the dimensional complexity of the objects within the file without requiring the entire file to be accessed.

Regarding claim 2, Swift describes a recording means for recording the multimedia file in column 7 lines 51-54 ("*The viewing system takes a Stereoscopic Media File, displays it on the user side according to the user's display preferences, and saves a local copy in whatever display format the user selects.*").

Regarding claim 3, Swift describes the file generation means outputs said multimedia information file to an external communication path in column 7 lines 49-54 ("*There is an embodiment that saves and converts one format into another from the Internet using a local drive from original source. The viewing system takes a Stereoscopic Media File, displays it on the user side according to the user's display preferences, and saves a local copy in whatever display format the user selects.*").

Regarding claims 6 and 23, Swift teaches providing a particular file format in column 3 lines 24-26 and 47-50, however Swift fails to teach providing a different extension for the file indicating whether three-dimensional image data is contained within the file. Osaka teaches a. file generation means provides a different extension to said multimedia information file between when said multimedia information file contains the three-dimensional image data and when said multimedia information file contains no three-dimensional image data in column 5 lines 4-11 ("*...to provide a display control apparatus and a display control method in which paint information indicating whether a three-dimensional display is possible or not is provided in the header of a file...*"). The motivation to combine the teachings of Swift with Osaka is equivalent to the motivation of claim 1.

Regarding claims 7 and 24, Swift fails to teach the limitations. Osaka teaches that the extension adapts to the plurality of different three-dimensional display methods and is different for each of said plurality of three-dimensional display methods in column 17 lines 26-41 ("*...whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information...these processing operations may be executed by a file*

extension...If it is determined at step S64 that this window has a three-dimensional image file...the display driver 6 is controlled to present the three-dimensional display...on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12."). The motivation to combine the teachings of Swift with Osaka is equivalent to the motivation of claim 1.

Regarding claim 12, Swift describes an image data reproduction apparatus in column 5 lines 21-23, and as shown in Figure 2 as element 102. Swift also describes receiving a multimedia information file including both of three-dimensional image display control information in column 3 lines 24-26 & 47 and said three-dimensional image data in column 8 lines 11-20 ("*An embodiment supports a stereoscopic media file that contains sub-media. Specifically, a file structure is created to store and preserve various types of stereo media...This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain...a Stereo Still Image 1004...Stereoscopic Object Model...*"), where it is described that the stereoscopic media file also contains three-dimensional image data, obtained by encoding a parameter for displaying three-dimensional image data and said three-dimensional image data, or two-dimensional image data in column 4 lines 6-11 ("*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output...methods include a video setup format for compression...Several tools are used in the process. These include...a stereo compression analysis tool to detect if the stereo information is preserved after compression.*")

and in column 11 lines 12-16 ("*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*"). Swift describes a file structure analysis means for analyzing a structure of said multimedia information file, such as the file format, so as to extract the three-dimensional image display control information and the three-dimensional image data in column 3 lines 24-50, where it is described that the file format is analyzed to determine the associated display format. Swift also describes three-dimensional image display control information analysis means for analyzing said three-dimensional image display control information and data reproduction means for reproducing said three-dimensional image data in column 3 lines 24-50 ("*...it provides a single format with independent right and left channels...to represent the stereoscopic media...it provides automatic and manual optimization adjustments such as parallax shift adjustment, brightness control, color adjustment, and cross-talk reduction to the stereoscopic media...*"), where it is described that the file format is analyzed to determine the display control data. Swift describes a data conversion means for converting said reproduced three-dimensional image data where the data conversion means converts said reproduced three-dimensional image data for data for display based on a result of analysis by the three-dimensional image display control information analysis in column 3 lines 24-26 ("*...a single media file format that is converted to various display formats on the user side...*") and in column 8 lines 45-63 ("*Another embodiment allows for automatic detection of 3D display hardware...an appropriate display method can be automatically selected...Another embodiment automatically (or manually if desired) adjusts with overall left and right image shift...the 3D stereoscopic image is adjusted accordingly...*"), where it is described that based on

the display device, the file format of the display control information is analyzed and is converted to the proper display control file format required to accurately display the three-dimensional data, thereby correctly reproducing the 3D media on the display. However, Swift fails to teach header control information. Osaka teaches header control information in column 5 lines 4-11 ("*...information indicating whether a three-dimensional display is possible...provided in the header of a file...this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed...*"), where it is described that the display of the three-dimensional data produced with respect to the header information that is analyzed from the file illustrated in Figure 12. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift with Osaka because this combination would provide the ability to display stereoscopic images stored in a particular display format on any display device, as taught by Swift, in which the display control processing is reduced through the indication of the presence of three-dimensional data within the file, as taught by Osaka, thereby quickly identifying and distinguishing whether two or three-dimensional display control is required during display.

Regarding claims 14 and 15, Swift providing a particular file format that indicates 3D media in column 3 lines 24-26 and 47-50, however Swift fails to teach analyzing a structure of the multimedia information file to determine whether three-dimensional image data is contained within the file. Osaka teaches a file type determination means for analyzing a structure of said multimedia information file so as to determine whether three-dimensional image display control information is included where the file type determination means determines whether said multimedia information file includes the three-dimensional image in column 17 lines 26-41

("*...whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information...these processing operations may be executed by a file extension...If it is determined at step S64 that this window has a three-dimensional image file...the display driver 6 is controlled to present the three-dimensional display...on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"). The motivation to combine the teachings of swift with Osaka is equivalent to the motivation of claim 1.

Regarding claim 16, Swift teaches an image data reproduction apparatus in column 5 lines 21-23, and as shown in Figure 2 as element 102. Swift also teaches reception means for receiving a multimedia information file including three-dimensional image display control information in column 3 lines 24-26 and 47-50 obtained by encoding a parameter for displaying three-dimensional image data and said three-dimensional image data, or two-dimensional image data in column 4 lines 6-11 ("*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output...methods include a video setup format for compression...*"). Swift teaches a parameter including information data for controlling display of the three-dimensional image data in column 2 lines 28-41 ("*The preferred embodiment...provides a single format with independent right and left channels...to represent the stereoscopic media...it provides a means of displaying stereoscopic media...it provides automatic and manual optimization adjustments such as*

parallax shift adjustment...to the stereoscopic media based on viewing hardware...for optimal viewing quality."), where it is described that information that controls how to display the three-dimensional image data is provided. However, Swift fails to teach file type determination. Osaka teaches a file type determination means for analyzing an extension of said multimedia information file where the file type determination means determines whether said multimedia information file includes said three-dimensional image data or determines on which three dimensional display scheme data is based on, based on said extension in column 17 lines 23-41 ("*...it is determined, based upon the information in the file header 51, whether this window has three-dimensional image data. In this example, whether or not a three-dimensional image is to be displayed has been recorded as information in the header 51 and therefore the decision of step S64 is rendered promptly by making reference to this information...these processing operations may be executed by a file extension...If it is determined at step S64 that this window has a three-dimensional image file...the display driver 6 is controlled to present the three-dimensional display...on the basis of the three-dimensional image data obtained from the three-dimensional image data 52, the screen controller 9 controls the image painting unit 7 and the checkered mask-pattern painting unit 8 and causes a three-dimensional display to be presented at the position of the window of the stereoscopic display 12.*"). It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift with Osaka because this combination would provide the ability to display stereoscopic images stored in a particular display format on any display device, as taught by Swift, in which the display control processing is reduced through the indication of the presence of three-dimensional data

within the file, as taught by Osaka, thereby quickly identifying and distinguishing whether two or three-dimensional display control is required during display.

Regarding claim 20, Swift teaches an image data recording medium having stored thereon information representing a multimedia information file, where the information executed on an image data reproduction apparatus in column 12 lines 6-17. Swift also teaches an image data recording medium recording a multimedia information file in column 7 lines 51-54 ("*The viewing system takes a Stereoscopic Media File, displays it on the user side according to the user's display preferences, and saves a local copy in whatever display format the user selects.*") including both of three-dimensional image display control information generated by encoding a parameter for displaying three-dimensional image data, in column 4 lines 6-11. However, Swift fails to teach header control information. Osaka teaches header control information in column 5 lines 4-11 ("*...information indicating whether a three-dimensional display is possible or not is provided in the header of a file...this information is used to decide execution of a three-dimensional display, thereby making it possible to readily decide whether a three-dimensional display is to be executed or not.*"), as shown in Figure 12 as element 51. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift with Osaka because this combination would provide encoded three-dimensional image data as taught by Swift, in which the three-dimensional data file comprises a header control data, as taught by Osaka, in which the data processing is reduced through analysis of the header control information which indicates what types of objects the file contains without requiring the entire file to be processed.

Regarding claim 33, Swift teaches an image data recording medium having stored thereon information representing a multimedia information file, where the information executed on an image data reproduction apparatus in column 12 lines 6-17. Swift also teaches a multimedia information file including three-dimensional image display control information in column 3 lines 24-26 and 47-50, generated by encoding a parameter for displaying three-dimensional image data in column 4 lines 6-11 ("*The encoding processes used include independent compression of the Left and Right images. Independent compression of Left and Right provides better quality display output...methods include a video setup format for compression...Several tools are used in the process. These include...a stereo compression analysis tool to detect if the stereo information is preserved after compression.*") and said three-dimensional image data in column 11 lines 12-16 ("*If too much compression is applied, the image will loose its stereoscopic impact. This embodiment provides a measure of the quality of the stereoscopic image that can be used to readjust the compression system.*"). Swift teaches a recording area for recording three-dimensional image data in column 2 lines 21-25 ("*This invention presents new stereoscopic media delivery system that includes means for...storing stereoscopic media...*") as shown in Figure 1 as element 12, an audio recording area for recording audio data in column 8 lines 10-23 ("*...a file structure is created to store and preserve various types of stereo media in various formats...this file format can also store...audio...*"), and a sub code area for recording associated information, which has been interpreted to be any fragment or portion of data storage in the file containing data such as video or audio, as described in column 8 lines 10-23 ("*A stereo media file format may contain certain sub media...An embodiment supports a stereoscopic media file that contains sub-media...this file*

format can also store monoscopic media, as well as audio or other data. This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain a script 1002, a Stereo Still Image 1004, a Stereoscopic Animation/movie 1006, Stereoscopic Object Model 1008, a Thumbnail 1010, and Audio 1012."). However, Swift fails to teach a recording area comprising information regarding a time code. Osaka teaches storing information regarding a time code for the image data in column 20 lines 61-67 – column 21 lines 1-5 ("*...image data is read out of the...image file...images are displayed continuously several viewpoints at a time...by the crossed-lenticular scheme...*") and in column 13 lines 16-18 ("*...images are displayed in time-division fashion...*"), where it is described that images are continuously displayed at particular times, therefore the system implicitly stores time instances or time codes related to teach image within a portion of the data memory storage space in order to correctly provide the images to the user. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift with Osaka because this combination would provide encoded three-dimensional image data as taught by Swift, in which the three-dimensional data file comprises time data, as taught by Osaka, where image data is improved through synchronization of time instances for the displayed images thereby preserving the three-dimensional data.

Regarding claim 34, Swift illustrates information that when executed, records at least a portion of said three-dimensional image display control information in the image recording area in Figure 1, where it is shown a portion of the display control information(14, 16, 18, 20, 22, 24, 26) is recorded in the media file(12).

Regarding claim 35, Swift teaches information that when executed, records at least a portion of said three-dimensional image display control information in the audio recording area in column 8 lines 10-23 ("*A stereo media file format may contain certain sub media...An embodiment supports a stereoscopic media file that contains sub-media...this file format can also store monoscopic media, as well as audio or other data.*"), where it is described that any media data within the stereo file, as illustrated in Figure 1 as element 12, may be stored with the audio therefore the audio file may contain video or display control information.

Regarding claim 36, Swift teaches information that when executed, records at least a portion of said three-dimensional image display control information in the sub code area in column 8 lines 10-23 ("*A stereo media file format may contain certain sub media...An embodiment supports a stereoscopic media file that contains sub-media...this file format can also store monoscopic media, as well as audio or other data. This one file format can store multiple or single stereo/non-stereo media elements. FIG. 10 illustrates a VRR file 1000 that may contain a script 1002, a Stereo Still Image 1004, a Stereoscopic Animation/movie 1006, Stereoscopic Object Model 1008, a Thumbnail 1010, and Audio 1012.*"), where it is described that any media data may be stored with the sub media, therefore the sub media file may contain video or display control information.

Claims 4, 13, 17 and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka, in further view of Connell (US Patent 5,581,625) and in further view of Harman (US Patent 6,496,598).

Regarding claims 4, 13, 17 and 21, Swift teaches three-dimensional image display control information in Figure 1 element 10, including information indicating a number of viewpoints of the three-dimensional image data and information indicating from which viewpoint position the three-dimensional image data is obtained in column 9 lines 53-62 ("*One embodiment stores a series of 3D stereoscopic images of an object into one file. FIG. 16 illustrates one way to store a series of N images into a single resource file. The first image 1600 is at the top of the file and the rest of the images follow sequentially until the last file 1602...the point of view of the camera is swung around the object to generate all of the intermediate images.*"), as shown in Figure 17. Swift also teaches information indicating arrangement of a camera that has picked up three-dimensional data in column 10 lines 52-65 and is shown in Figure 19. Swift also teaches indicating a maximum shift amount when a parallax image of three-dimensional data is shifted in column 8 lines 51-63 ("*...automatically (or manually if desired) adjusts with overall left and right image shift to compensate for image magnification. When a 3D stereoscopic image is enlarged...there is a potential of creating large separations between objects in the 3D stereoscopic image that can lead to eyestrain for the viewer. The present invention stores important parameters about the 3D stereoscopic image like width, height, target screen size, etc. When the 3D stereoscopic image is to be displayed on a display that is larger or smaller than the target screen size, then the 3D stereoscopic image is adjusted accordingly to minimize eye fatigue for the user.*"), where it is described that the shift of the image is performed until it reaches a position in which if shifted further, the three-dimensional depth would not be preserved. Swift fails to teach the remaining limitations. Osaka teaches identification of three-dimensional data within a multimedia information file in column 17 lines 23-26 ("*...it is*

determined, based upon the information in the file header 51, whether this window has three-dimensional image data..."). Swift and Osaka fail to teach the remaining limitations. Connell teaches a direction of sub-sampling three-dimensional data in column 7 lines 18-25 ("*The combined stereo video signal is then fed to computer 52, which digitizes same, separates the left and right images and subsamples each to obtain two compressed 100 by 65 pixel images (100 pixels across and 65 up and down). Prior to subsampling or compression, the combined image is 512 by 512 pixels (each half image is 512 pixels across and 256 up and down). Compression extracts, for example, every fifth pixel across and up and down...*"). However, Swift, Osaka and Connell fail to teach indicating whether a border is to be display around and image, and an identification of three-dimensional data within a multimedia information file. Harman teaches indicating whether a border is to be displayed around an image of said three-dimensional image data in column 6 lines 45-51 ("*The processes would then work in either real-time or non real-time in order to create the 3D images. This can be further optimised through the use of borders...The 3D images may then be stored or transmitted to a 3D display, including shutterglasses, polarising glasses or an autostereoscopic display.*"), and indicating border image data to be displayed around the image of said three-dimensional image data in column 14 lines 4-20 ("*The present invention therefore preferably also defines a common border or reference point within a viewed image...This has the advantage of enhancing the stereoscopic effect in many scenes. This reference point can be a simple video border or...i) A simple coloured video border around the perimeter of the image. ii) A complex coloured video border consisting of two or more concentric borders...*"). It would have been obvious to one of ordinary skill in the art to combine the teachings of Swift in view of Osaka, in further view of Connell and in further view

of Harman because this combination would provide an accurate display of stereoscopic image data that has been analyzed to determine the three-dimensional data to be displayed, in which adjustment through shifting and modifications to the image data using borders based on the determined display information enables preservation of the stereoscopic effect.

Claims 10, 18 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka in further view of Tanaka (US Patent 6,233,004).

Regarding claims 10, 18 and 25, Swift teaches an image data generation apparatus generating a multimedia information file including both of image pick-up condition information indicating an image pick-up condition for a three-dimensional image in column 9 lines 53-62 and in column 10 lines 52-65, therefore the apparatus contains one or more equivalent generation units that would execute the method of generating the images stored on a computer-readable medium. Swift also teaches a multimedia information file that contains three-dimensional image data, as described in column 2 lines 29-31. However, Swift fails to teach header control information and image pick-up information including information indicating a number of parallaxes in a horizontal direction and perpendicular thereto. Osaka teaches header control information in column 5 lines 4-11, as shown in Figure 12 as element 51. Swift and Osaka fail to teach image pick-up information including information indicating a number of parallaxes in a horizontal direction and perpendicular thereto. Tanaka teaches image pick-up information indicating a number of parallaxes, or viewpoints, in a horizontal direction and a direction perpendicular thereto, which is therefore in a vertical direction, in column 4 lines 26-31 and 45-47. It would have been obvious to one of ordinary skill in the art at the time of invention to

combine the teachings of Swift, Osaka and Tanaka because this combination would provide accurate display of stereoscopic images through the analysis of the placement of several viewpoints required to display three-dimensional images correctly thereby preserving the depth and reducing visual discomfort experienced while viewing the images.

Claims 11, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swift in view of Osaka in further view of Uomori et al.(herein "Uomori", US Patent 6,005,607).

Regarding claims 11, 19 and 26, Swift teaches an image data generation apparatus generating a multimedia information file including both of image pick-up condition information indicating an image pick-up condition for a three-dimensional image in column 9 lines 53-62 and in column 10 lines 52-65, therefore the apparatus contains one or more equivalent generation units that would execute the method of generating the images stored on a computer-readable medium. Swift also teaches a file that contains three-dimensional image data in column 2 lines 29-31, and teaches indicating a camera arrangement shape indicating an interval between adjacent cameras in column 10 lines 52-65 and is shown in Figure 19. Swift fails to teach header control information and information indicating a distance from a camera arrangement plane to a convergence point. Osaka teaches header control information in column 5 lines 4-11, as shown in Figure 12 as element 51. However, Swift and Osaka fail to teach information indicating a distance from a camera arrangement plane to a convergence point. Uomori teaches information indicating a distance from a camera arrangement plane to a convergence point, which is comprised in camera parameter information, in column 5 lines 24-31 ("*...the fusional range verification section 11 calculates...the camera parameters...distance dx from camera converging*

point to imaginary camera position V..."), and is shown in Figure 2 as dx. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Swift, Osaka and Tanaka because this combination would provide visually appealing stereoscopic images through accurate adjustment of the parallax and viewpoints of the image acquisition devices with respect to calculated distances from the device to a convergence point.

Response to Arguments

Applicant's arguments with respect to claims 1-4, 6, 7, 10-21, 23-26 and 33-36 have been considered but are moot in view of the new ground(s) of rejection.

The objection to the title has been maintained because the title of the invention is not descriptive and is not clearly indicative of the invention to which the claims are directed.

The objection to claims 18-19 and 25-26 for being duplicates of claims 10-11, as well as the objection to claims 16-17 for being duplicates of claims 12-13, has been withdrawn.

The 35 U.S.C. 112, second paragraph rejection of claims 33-36 has been withdrawn due to the amendments to claim 33.

The 35 U.S.C. 101 rejection of claims 20, 21, 23-26 and 33-36 has been withdrawn due to the amendments to claim 20.

The applicant argues that the reference Swift used in the 35 U.S.C. 103(a) rejection of claim 1 does not teach a parameter including information for controlling the display of three-dimensional image data. However, Swift teaches information data for controlling display of the three-dimensional image data in column 2 lines 28-41 ("*The preferred embodiment...provides a single format...to represent the stereoscopic media...it provides a means of displaying*

stereoscopic media...it provides automatic and manual optimization adjustments such as parallax shift adjustment...to the stereoscopic media based on viewing hardware...for optimal viewing quality."), where information is provided to control the accurate display of three-dimensional image data.

The applicant argues that the reference Swift used in the 35 U.S.C. 103(a) rejection of claim 1 does not teach header control information. However, in view of the new grounds of rejection recited above, Osaka was relied upon to teach header control information in column 5 lines 4-11, as shown in Figure 12 as element 51.

The applicant argues that the reference Swift used in the 35 U.S.C. 103(a) rejection of claim 1 does not teach a sub code area for recording associated information including a time code. However, in view of the amendments to claim 1, Osaka was relied upon to teach a sub code area of a file, which has been interpreted to be a portion or fragment of information or data stored in the file, including time data in column 20 lines 61-67 – column 21 lines 1-5 ("...*image data is read out of the...image file...images are displayed continuously several viewpoints at a time...*") and in column 13 lines 16-18 ("...*images are displayed in time-division fashion...*"), where it is described that images are continuously displayed at particular times, therefore the system implicitly stores time instances or time codes related to teach image within a portion of the data memory storage space in order to continuously provide accurate images to the user.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Said Broome whose telephone number is (571)272-2931. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Said Broome/
Art Unit 2628
7/16/07

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER